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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,395	08/31/2001	Mark Alan Lemkin	AIMI-01833US0	3000
28554	7590	10/29/2003	EXAMINER	
VIERRA MAGEN MARCUS HARMON & DENIRO LLP			TAMAI, KARL I	
685 MARKET STREET, SUITE 540				
SAN FRANCISCO, CA 94105			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/944,395

**Applicant(s)**

LEMKIN, MARK ALAN

**Examiner**

Tamai I E Karl

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 6/24/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 27-29 is/are pending in the application.  
4a) Of the above claim(s) 16-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152).
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 801,903. 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Group I in Paper No. 6/24/2003 is acknowledged. Claims 16-26 are withdrawn from consideration.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second set of movable fingers being 90 degrees from the first set (claim 28) must be shown or the features canceled from the claim. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 28 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 28 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not contain a full, clear, concise, and exact written description or enable an actuator with a second set of movable fingers being 90 degrees from the first set the second set of movable fingers being 90 degrees from the first set.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 7, and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nakagawa et al. (Nakagawa)(JP 04-343,318). Nakagawa teaches an actuator with a finger 4a having voltage potential between the first 12 and second surfaces 13, which moves in respect to the voltage applied to the second finger 15a. Nakagawa teaches a voltage source Vcc supplying the three voltages sources to the fingers and surfaces. The electrostatic fingers effecting a force between the moving and stationary combs.

9. Claims 1-4, 7-10 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated Yamada et al. (Yamada)(US 5959760). Yamada teaches a stationary electrode capable of supporting an voltage potential between the top and bottom surfaces (7-a,a', b, b') and a moving mirror comb fingers that moves when a voltage is applied to the fingers, where the moving mirror is supported by springs. The moving and stationary electrodes 7a,b,a',b' having voltages sources applied to the electrodes, which an op-amp circuit to determine the position of the moving member.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. (Nakagawa)(JP 04-343,318) or Yamada et al. (Yamada)(US 5959760). Nakagawa and Yamada teach every aspect of the invention except the voltage applied to the moving finger is significantly greater, than the stationary finger, such as 10 times greater. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada or Nakagawa with the voltage applied to the moving finger is significantly greater, than the stationary finger, such as 10 times greater, to optimized the speed and deflection of the actuator, and because it has been held that were the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233).

12. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Yamada)(US 5959760), in further view of Nakagawa et al. (Nakagawa)(JP 04-343,318). Yamada teaches a fixed voltage on a moving comb, with a voltage differential on the stationary comb. Yamada teaches every aspect of the invention except a voltage source applied across the upper and lower surfaces of the stationary comb. Nakagawa teaches a fixed voltage on a stationary comb, with a significant voltage differential (0-Vcc) on the moving comb. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada with the voltage differential on the stationary combs across the

stationary combs because Nakagawa teaches the voltage differential across the electrode provides low voltage, high speed actuator with a large torsional angle.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Yamada)(US 5959760) and Nakagawa et al. (Nakagawa)(JP 04-343,318).

Yamada and Nakagawa teach every aspect of the invention except the voltages being 100 and 10 volts fingers. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada and Nakagawa with a 100 and 10 volt differential to optimize the driving of combs, and because it has been held that were the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233).

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Yamada)(US 5959760), in further view of Miller et al. (Miller)(US 6000280).

Yamada teaches every aspect of the invention except the moving electrode being smaller than the stationary electrode. Miller teaches changing the height of the electrode increase the static deflection. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada with the moving electrode being smaller than the stationary electrode, as taught by Miller, to increase the static deflection of the mover.

15. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Yamada)(US 5959760), in further view of Miller et al. (Miller)(US 6000280).

Yamada teaches every aspect of the invention except the stationary finger being 1.5 times moving electrode. Miller teaches changing the height of the electrode increase the static deflection. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada and Miller with the stationary electrode being 1.5 times the moving electrode to optimized the static deflection, and because it has been held that were the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233).

16. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Yamada)(US 5959760) in further view of Saif et al. (Saif)(US 5862003). Yamada teaches every aspect of the invention except the spring being 180 degrees from the comb actuator with regards to the mirror. Saif (figures 4-6) shows an actuator 180 from the springs with regards to the stage. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada with the spring being 180 degrees from the comb actuator with regards to the mirror, as in Saif, to provide a highly controllable and stable actuator.



17. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (Yamada)(US 5959760). Yamada teaches every aspect of the invention except the second set of moving electrodes being 90 degrees from the first set. Yamada teaches a second set of electrodes (figure 12) to rotate the mirror about two axis. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Yamada with the second set of electrodes to rotate the mirror about two axis.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. The facsimile number for the Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai  
PRIMARY PATENT EXAMINER  
October 17, 2003

KARL TAMAI  
PRIMARY EXAMINER  
